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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/649,612	08/28/2003	Yoshitsugu Kato	1035 -466	5283
23117	7590	07/15/2005	EXAMINER	
NIXON & VANDERHYE, PC 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203			PRETLOW, DEMETRIUS R	
			ART UNIT	PAPER NUMBER
			2863	

DATE MAILED: 07/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/649,612

Applicant(s)

KATO ET AL.

Examiner

Demetrius R. Pretlow

Art Unit

2863

*mw*

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 28 August 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5-12 is/are allowed.
- 6) ☒ Claim(s) 1 is/are rejected.
- 7) ☒ Claim(s) 2-4 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date ~~PTO-1449~~ 10/15/03
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Specification***

The disclosure is objected to because of the following informalities: Throughout the specification it appears that the inventor of Japanese Publication for Unexamined Patent Application 10-232273 is Kazuhiko et al. not Tokukaihei.

Appropriate correction is required.

### ***Claim Objections***

Claim 3 is objected to because of the following informalities:

In line 7, CR is not defined.

In line 11, the examiner can not ascertain as to what would be a –slight voltage fluctuation-- .

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Kazuhiko et al. (JP 10-232273). Kazuhiko et al. teach a load applying section for applying a load to a battery. Note paragraph 66, lines 2-3. Kazuhiko et al. teach a measuring section (a/d converter) measuring input (alternating current) and output characteristics (alternating voltage) of the battery in response to the applied load; Note paragraph 73, lines 1-4. Kuzuhiko et al. teach a diagnosing section (b) diagnosing a state of the battery by applying a result of the measurement to a mathematical expression obtained by a system identification method; Note paragraph 66, lines 3-4 and paragraph 74, lines 1-4. Kazuhiko et al. teach said battery state diagnosing device applies the load to the battery as a current load. Note paragraph 9, lines 7-9.

### ***Claim Objections***

Claims 2-4 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

In reference to claim 2, the prior art of record does not teach the limitations of the measured output characteristic is a terminal voltage of the battery; and when diagnosing the battery by system identification, an electromotive force component of a fluctuating terminal voltage of the battery is removed as a bias, and a slight voltage fluctuation after the electromotive force component has been removed is amplified and used for the diagnosis by the system identification. It is this limitations found in each of the claims, as

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they are **claimed in the combination**, that has not been found, taught or suggested by the prior art of record.

In reference to claims 3-4, the prior art of record does not teach the limitations of the measured output characteristic is a terminal voltage of the battery; and when diagnosing the battery by system identification, a fluctuating terminal voltage of the battery is separated into a perpendicular component which derives from a serial resistance of the battery, and a component representing CR dynamics; the perpendicular component is removed from the terminal voltage and a slight voltage fluctuation after the perpendicular component has been removed is amplified and used for the diagnosis by the system identification. It is this limitations found in each of the claims, as they are **claimed in the combination**, that has not been found, taught or suggested by the prior art of record.

#### ***Allowable Subject Matter***

Claims 5-12 are allowed.

The best prior art of record particular Kazuhiko et al. (JP 10-232273). Teach An AC voltage  $v_B$  and AC current  $i_B$  of a battery are sampled by an analog-digital converter in the state that an AC signal output from a pseudo random noise generating means 12 is applied to the battery 11 to be analyzed via an impedance element 13.

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The primary reason for the allowance of claim 5 is the inclusion of the method step of the load applying section applies a current to the battery when the battery is not supplied with fuel. It is this step found in each of the claims, as it is **claimed in the combination**, that has not been found, taught or suggested by the prior art of record which makes these claims allowable over the prior art.

The primary reason for the allowance of claim 6 is the inclusion of the limitations of a circuit section for constituting a closed circuit by serially connecting the battery to a current load when diagnosing the battery; It is this limitations found in each of the claims, as they are **claimed in the combination**, that has not been found, taught or suggested by the prior art of record which makes these claims allowable over the prior art.

The primary reason for the allowance of claim 7 is the inclusion of the limitations of a circuit section for constituting a closed circuit by serially connecting the battery to a current load when diagnosing the battery; It is this limitations found in each of the claims, as they are **claimed in the combination**, that has not been found, taught or suggested by the prior art of record which makes these claims allowable over the prior art.

The primary reason for the allowance of claims 8-11 is the inclusion of the method step of step of applying a load to the battery serially connects a the battery to a current load. It is this step found in each of the claims, as it is **claimed in the**

**combination**, that has not been found, taught or suggested by the prior art of record which makes these claims allowable over the prior art.

The primary reason for the allowance of claim 12 is the inclusion of the limitations of an the current is applied to the battery when the battery is not supplied with fuel, and said step of applying a current serially connects to the battery to a voltage source. It is these limitations found in each of the claims, as they are **claimed in the combination**, that has not been found, taught or suggested by the prior art of record which makes these claims allowable over the prior art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Demetrius R. Pretlow whose telephone number is (571) 272-2278. The examiner can normally be reached on Mon.-Fri. 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on (571) 272-2269. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Demetrius R. Pretlow

*Demetrius Pretlow* 7/6/05

Patent Examiner

**BRYAN BUI**  
**PRIMARY EXAMINER**

*Bryan Bui*